

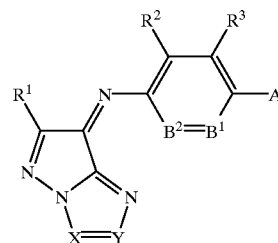
[0296] <Light-Resistance>

[0297] The photo glossy paper on which the image was formed was irradiated for three days with xenon light (85000 lx) by using a weathermeter (Atlas C. I65). The image densities before and after the xenon illumination were measured by using a reflection densitometer (X-Rite 310TR), and the retention rate of the dye was evaluated. The reflection density was measured at the three points of 1, 1.5 and 2.0. When all of the densities had a dye retention rate of 70% or higher, a mark of A was given. When one or two points had a dye residual rate of less than 70%, the evaluation B was given. When the dye retention rate was less than 70% at all of the densities, the mark of C was given.

[0298] <Stability With Time>

[0299] The ink for ink jetting was left at 25° C. for 1 month and then filtered through a 0.2 μ m filter, and the degree of coloration of the filter was visually evaluated in the following 3 ranks: A (no or less coloration), B (slight coloration) and C (significant coloration).

Formula (1)



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wherein R^1 represents a hydrogen atom, aliphatic group, aromatic group, heterocyclic group, cyano, $—OR^{11}$, $—SR^{12}$, $—CO_2R^{13}$, $—OCOR^{14}$, $—NR^{15}R^{16}$,

TABLE 2

No.	Fine-particle dispersion		Dye	Ratio of polymer/dye by weight	Diameter of fine particle (nm)	Absorption of aqueous dispersion			Color tone	Dependence on paper	Water resistance	Light resistance	Stability with time
	No.	Polymer				λ_{max} (nm)	A-	A+					
Example 1	A-1	P-5	I-11	4/1	43	542	0.18	0.06	A	A	A	A	A
Example 2	A-2	P-5	I-25	5/2	48	544	0.19	0.07	A	A	A	A	A
Example 3	A-3	P-6	I-18	3/1	55	552	0.21	0.08	A	A	A	A	A
Example 4	A-4	P-17	I-25	4/1	28	541	0.18	0.06	A	A	A	A	A
Example 5	A-5	P-19	I-3	4/1	36	550	0.19	0.06	A	A	A	A	A
Example 6	A-6	P-27	I-21	4/1	65	548	0.17	0.08	A	A	A	A	B
Example 7	A-7	P-32	I-44	4/1	35	540	0.19	0.05	A	A	A	A	A
Example 8	A-8	P-34	I-18	4/1	110	553	0.19	0.07	A	A	A	A	A
Example 9	A-9	P-5	I-51	4/1	23	553	0.18	0.06	A	A	A	A	A
Comparative example 1	B-1	P-17	H-1	4/1	45	534	0.33	0.24	B	B	A	B	C
Comparative example 2	—	—	H-2	—	—	536	0.41	0.03	A	B	C	B	A

[0300] As is evident from Table 2, the inks for the ink jet according to the Examples were excellent in coloration and color tone, free of dependence on paper, and excellent in water-resistance and light-resistance.

What is claimed is:

1. An ink for an ink jet comprising a coloring composition comprising:

(a) a dispersion medium; and

(b) coloring particulates comprising:

(b-1) a polymer which is selected from the group consisting of polyurethanes, polyesters, polyamides, polyureas and polycarbonates; and

(b-2) an oil-soluble dye represented by formula (1):

$—CONR^{17}R^{18}$, $—SO_2R^{19}$, $—SO_2NR^{20}R^{21}$, $—NR^{22}CONR^{23}R^{24}$, $—NR^{25}CO_2R^{26}$, $—COR^{27}$, $—NR^{28}COR^{29}$ or $—NR^{30}SO_2R^{31}$, and R^{11} , R^{12} , R^{13} , R^{14} , R^{15} , R^{16} , R^{17} , R^{18} , R^{19} , R^{20} , R^{21} , R^{22} , R^{23} , R^{24} , R^{25} , R^{26} , R^{27} , R^{28} , R^{29} , R^{30} and R^{31} each represents independently a hydrogen atom, aliphatic group or aromatic group; wherein A represents $—NR^4R^5$ or a hydroxyl group, and R^4 and R^5 each represents independently a hydrogen atom, aliphatic group, aromatic group or heterocyclic group; wherein B^1 represents $=C(R^6)—$ or $=N—$ and B^2 represents $—C(R^7)=$ or $—N=$; wherein R^2 , R^3 , R^6 and R^7 each represents independently a hydrogen atom, halogen atom, aliphatic group, aromatic group, heterocyclic group, cyano, $—OR^{51}$, $—SR^{52}$, $—CO_2R^{53}$, $—OCOR^{54}$, $—NR^{55}R^{56}$, $—CONR^{57}R^{58}$, $—SO_2R^{59}$, $—SO_2NR^{60}R^{61}$, $—NR^{62}CONR^{63}R^{64}$, $—NR^{65}CO_2R^{66}$, $—COR^{67}$, $—NR^{68}COR^{69}$ or $—NR^{70}SO_2R^{71}$, and R^{51} , R^{52} , R^{53} , R^{54} , R^{55} , R^{56} , R^{57} , R^{58} , R^{59} , R^{60} , R^{61} , R^{62} , R^{63} , R^{64} , R^{65} , R^{66} , R^{67} , R^{68} , R^{69} , R^{70} and R^{71} each represents independently a hydrogen atom, aliphatic group or aromatic group; wherein R^2 and R^3 , R^3 and R^4 , R^4 and R^5 , R^5 and R^6 , or R^6 and R^7 may be mutually bound to form a ring; wherein X and Y each represents